WHAT IS CLAIMED IS:

A method of demosaicing a mosaiced image comprising:
 receiving said mosaiced image, said mosaiced image being a

5 representation of a scene of interest; and

processing said mosaiced image using a demosaicing operator on blocks of said mosaiced image to derive a representation of a demosaiced image, said demosaicing operator incorporating a frequency-based transformation operator to take into account a subsequent frequency-based compression process.

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- 2. The method of claim 1 wherein said demosaicing operator used in said processing of said mosaiced image includes a color space conversion operator for converting from an original color space to a different color space.
- The method of claim 2 wherein said demosaicing operator used in said processing of said mosaiced image includes said color space conversion operator for converting from an RGB color space to a Yc,cb color space.
- 4. The method of claim 1 wherein said processing of said mosaiced image includes interpolating said mosaiced image using said demosaicing operator, said demosaicing operator being derived by defining selected coefficients of transformation-related coefficients as being equal to zero.
- The method of claim 4 wherein said selected coefficients are higher
 frequency components than remaining coefficients of said transformation-related coefficients.
 - 6. The method of claim 1 wherein said processing of said mosaiced image includes interpolating said mosaiced image using said demosaicing operator, said demosaicing operator being derived by defining transformation-related coefficients as having a predefined probability distribution.

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- 7. The method of claim 6 wherein said demosaicing operator is derived using the Bayesian rule.
- 8. The method of claim 6 wherein said predefined probability distribution is aNormal distribution.
 - 9. The method of claim 1 wherein said frequency-based transformation operator is a DCT-based transformation operator.
- 10. The method of claim 1 wherein said frequency-based transformation operator is a wavelet-based transformation operator.
 - 11. The method of claim 1 wherein said representation of said demosaiced image includes one of (a) a plurality of image pixel values, and (b) a plurality of transformed coefficients.
 - 12. The method of claim 1 wherein said demosaicing operator and said frequency-based transformation operator are matrices.
- 20 13. A method of processing a mosaiced image comprising: receiving said mosaiced image, said mosaiced image being a representation of a scene of interest;

demosaicing said mosaiced image using a demosaicing operator to produce a representation of a demosaiced image, said demosaicing operator incorporating a frequency-based transformation operator; and

compressing said representation of said demosaiced image using a frequency-based compression scheme.

14. The method of claim 13 wherein said demosaicing operator used in said demosaicing of said mosaiced image includes a color space conversion operator for converting from an original color space to a different color space.

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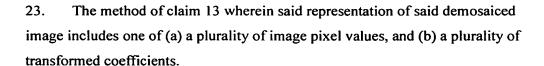
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- 15. The method of claim 14 wherein said demosaicing operator used in said demosaicing of said mosaiced image includes said color space conversion operator for converting from an *RGB* color space to a *Yc_rc_b* color space.
- 5 16. The method of claim 13 further comprising generating said demosaicing operator, including defining transformation-related coefficients that are associated with said compressing of said demosaiced image.
- 17. The method of claim 16 wherein said defining of said transformationrelated coefficients includes defining selected coefficients of said transformationrelated coefficients as being equal to zero.
 - 18. The method of claim 17 wherein said selected coefficients are higher frequency components than remaining coefficients of said transformation-related coefficients.
 - 19. The method of claim 16 wherein said defining of said transformationrelated coefficients includes defining said transformation-related coefficients as having a predefined probability distribution.

20. The method of claim 19 wherein said generating of said demosaicing operator includes applying the Bayesian rule to derive said demosaicing operator.

- The method of claim 13 wherein said frequency-based transformation
 operator is a DCT-based transformation operator, and wherein said frequency-based compression scheme is a DCT-based compression scheme.
 - 22. The method of claim 13 wherein said frequency-based transformation operator is a wavelet-based transformation operator, and wherein said frequency-based compression scheme is a wavelet-based compression scheme.



5 24. A system for processing a mosaiced image comprising:

means for demosaicing said mosaiced image to produce a representation of a demosaiced image using a demosaicing operator, said demosaicing operator incorporating a frequency-based transformation operator; and

- means for compressing said representation of said demosaiced image to produce a compressed image file, said compressing means configured to perform a frequency-based compression process.
- The system of claim 24 wherein said demosaicing operator used by said
 demosaicing means includes a color space conversion operator for converting to a
 Yc_rc_b color space.
 - 26. The system of claim 24 wherein said demosaicing operator is derived by defining transformation-related coefficients that are associated with said frequency-based compression process performed by said compressing means.
 - 27. The system of claim 26 wherein said demosaicing operator is derived by defining selected coefficients of said transformation-related coefficients as being equal to zero.

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- 28. The system of claim 26 wherein said demosaicing operator is derived by defining said transformation-related coefficients as having a predefined probability distribution.
- 30 29. The system of claim 24 wherein said demosaicing means and said compressing means are embodied in an application specific integrated circuit.

- 30. The system of claim 24 wherein said frequency-based transformation operator is a DCT-based transformation operator, and wherein said frequency-based compression process is a DCT-based compression process.
- 5 31. The system of claim 24 wherein said frequency-based transformation operator is a wavelet-based transformation operator, and wherein said frequency-based compression process is a wavelet-based compression process.
- 32. The system of claim 24 wherein said representation of said demosaiced image includes one of (a) a plurality of image pixel values, and (b) a plurality of transformed coefficients.
 - 33. The method of claim 24 wherein said demosaicing operator and said frequency-based transformation operator are matrices.

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